

REMARKS

The Office Action mailed January 26, 2004 has been reviewed and carefully considered. Claims 1 to 14 have been cancelled. Claims 15 to 28 have been added. Claims 15 to 28 are pending in this application, with claims 15, 21, and 28 being the independent claims. Reconsideration of the above-identified application, as amended, and in view of the following remarks is respectfully requested.

In the Office Action mailed January 26, 2004, the Examiner required under 37 C.F.R. §1.72(b) that an Abstract on a separate sheet be filed (Office Action, page 2). Applicants note that the present application is a U.S. national stage application of international stage PCT application No. PCT/FI00/00817, a published pamphlet version of which was included in the filing papers of this national stage application as WO 01/21888. The abstract appeared on the cover sheet of the published pamphlet version of the PCT application. As stated at §1893.03(e) of the MPEP (emphasis added):

When the international application is published as the pamphlet, the abstract is reproduced on the cover page of the publication, even though it appears on a separate sheet of the international application in accordance with PCT Rule 11.4(a). Thus the requirement of 37 C.F.R. §1.52(b) that the abstract "commence on a separate sheet" does not apply to the copy of the application (pamphlet) communicated to the designated Offices by the International Bureau under PCT Article 20. Accordingly, it is improper for the examiner of the U.S. national stage application to require the applicant to provide an abstract commencing on a separate sheet if the abstract does not appear on a separate sheet in the pamphlet. Unless the abstract is properly amended under the U.S. rules during national stage processing, the abstract that appears on the cover page of the pamphlet will be the abstract published by the USPTO under 35 U.S.C. §122(b) and in any U.S. patent issuing from the application.

Therefore, in the present national stage application, the filing of the original Abstract on a separate sheet is not necessary. Withdrawal of the objection is respectfully requested.

In the Office Action (page 2), the drawing was objected to under 37 C.F.R. §1.83(a). As discussed above, FIG. 1 has been appropriately amended. Applicants request approval of the proposed changes to the drawing and withdrawal of the objection. The specification has been amended on pages 8 and 11 to refer to the elements added to FIG. 1, namely, the "air cutting device" 12, and a device 11 to implement the "decision making algorithm".

The specification has also be amended to include a claim for PCT and foreign priority.

Rather than presenting extensively amended claims 1 to 14 which might be hard to read, these claims have been cancelled and rewritten as new claims 15 to 28.

Claims 1 to 14 were rejected under 35 U.S.C. § 112, first paragraph, for a number of reasons. In view of the amendments to the claims, it is requested that this rejection of the claims be withdrawn.

Claims 1 to 14 were rejected under 35 U.S.C. § 112, second paragraph, as being narrative and indefinite for a number of reasons. In view of the amendments to the claims, it is requested that this rejection be withdrawn.

Before discussing the prior art and the Examiner's rejections of the claims in view of the prior art, a brief summary of the present invention is appropriate. The invention relates to a web monitoring system in which the tension of the web is monitored and the nip of the calender is instructed to open when the measured web tension at a preset number of points over the cross-machine width of the web has fallen below a limit value that by a decision making algorithm monitoring the tension profile of the web has interpreted indicates damage to the web requiring opening of the calender nip. A decision to open the calender nip is made and the nips are opened before a complete break of the web occurs. The calender nip is instructed to open to avoid heat damage to soft-coated rolls in the calender which will likely occur if no web passes through the calender due to a web break.

By using the claimed invention, the size of the damaged area of the web which can successfully be passed through the calender without significant problems, can be optimized. The calender nip will not open when minor damage to the web is detected. Also, the nip will not wait to be opened until a complete web break takes place, which may require a significant amount of time to clean up due to the high web speeds typically employed. Consequently, unnecessary openings and late openings of the calender nip are minimized resulting in increased use of the calender, and the possibility that the soft rolls of the calender are damaged is decreased.

Independent claims 1, 7 and 14, and dependent claim 5, and 8 to 11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,158,334 ("Safman") in view of U.S. Patent No. 5,052,233 ("Rantala"). Dependent claims 6, 12 and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Safman and Rantala, and further in view of U.S. Patent No. 6,293,175 ("Enwald").

Independent claims 1, 7 and 14 (now canceled) correspond to new independent claims 15, 21 and 28.

Safman and Rantala disclose devices and methods for opening the nip of a calender when a break in the web is detected. Neither of these references disclose or suggest a device or method for determining when there is damage to the web less than a complete break of the web, and opening the calender nip in response to this determination, as recited in new independent claims 15, 21 and 28. And neither of these two references make reference to the possibility of detecting an imminent web break. As discussed above, there is a great advantage to opening the web before a web breakage has occurred but when such a web break is imminent, and the invention recited in new claims 15, 21 and 28 address that issue.

In Safman, the nip of the calender is opened when the web break is detected by device 99. (See, for example, col. 4, lines 39-44). There is no disclosure or suggestion in Safman of monitoring the web to ascertain if there is damage to the web less than a complete break, where such damage will lead to a future web break.

Rantala discloses a web tension measuring device which also detects actual web breaks. (See, for example, col. 1, lines 24-25). Again, there is no disclosure or suggestion to ascertain whether a web break is imminent.


For these reasons, new independent claims 15, 21 and 28 are patentable. The dependent claims are patentable for the same reasons that the independent claims are patentable.

In addition, there is no disclosure or suggestion in Safman and/or Rantala of obtaining multiple web tension readings of the web over a cross-machine width of the web and using those multiple readings to ascertain if a web break is imminent based upon partial damage to the web in a limited area, as recited in new dependent claims 17 and 18. For these additional reasons, new dependent claims 17 and 18 are patentable.

Applicants respectfully submit that this application is in condition for allowance, and such action is respectfully requested.

Respectfully submitted,

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